CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF ENVIRONMENTAL HEALTH HAZARD ASSESSMENT
ENVIRONMENTAL PROTECTION INDICATORS FOR CALIFORNIA (EPIC) PROJECT

NOTICE TO INTERESTED PARTIES
April 18, 2003

REQUEST FOR INFORMATION AND PUBLIC INPUT ON THE INITIAL SET OF ENVIRONMENTAL INDICATORS

The California Environmental Protection Agency's (Cal/EPA) Office of Environmental Health Hazard Assessment is the lead agency for the Environmental Protection Indicators for California (EPIC) Project. The EPIC Project is a collaborative effort of Cal/EPA, the California Resources Agency, the California Department of Health Services and a variety of stakeholders. The Project is responsible for establishing and maintaining environmental indicators to characterize the state of California's environment.

Environmental indicators present scientifically-based information on the status of, and trends in, environmental conditions over time. These indicators are intended to assist environmental programs in evaluating the outcomes of their efforts and in identifying areas that require more attention. In addition, the indicators serve as a useful tool in communicating environmental information.

Guidelines and criteria for identifying and selecting indicators and an initial set of indicators for environmental issues that are important for California to track are presented in an April 2002 report: *Environmental Protection Indicators for California.* The EPIC report and a synthesis document can be downloaded from: www.oehha.ca.gov/multimedia/epic/2002epicreport.html. The report discusses more than 80 environmental indicators reflecting the status of, and trends in air quality, water, land, waste and materials management, pesticides, transboundary issues (including global climate change and California-Baja California border issues), human and ecosystem health.

The EPIC Project plans to continually evaluate, improve and expand this initial set of indicators to ensure that they provide meaningful information about key environmental issues and contribute to the decision-making processes in environmental programs. Chapter 4 of the EPIC Report discusses ways by which the Project intends to improve the indicators (www.oehha.ca.gov/multimedia/epic/2002reptpdf/Chapter4.pdf).

OEHHA welcomes input from all interested parties throughout this process. Specifically, we are seeking public comment on the following:

- Are these indicators effective in providing meaningful information about environmental issues? Which are most effective in this regard?

- Are there data sets available that could enhance or replace existing indicators or be used as the basis for new indicators? In order to serve as the basis for indicator development, the data must be collected on an ongoing basis. Please provide a reference or source for the dataset.

- What other environmental issues that should be covered by the indicator system? Please suggest possible indicators and sources of data to support them.

- From your perspective, how can existing indicators be modified to make them more useful in your work?

- Please suggest alternative ways of presenting the indicators individually or collectively to more effectively communicate information.

While OEHHA does not intend to formally respond to each comment, all information received will be shared with EPIC Project collaborators, and considered in the process of reviewing and revising the indicators. In addition, future activities under the EPIC Project will be contingent upon the level of available funding.

In order to be considered, the relevant information must be received by OEHHA, regardless of method of transmission, by 5:00 p.m. on June 13, 2003. Submissions should be sent to:

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Comments may also be submitted online at: www.oehha.ca.gov

A full list of the initial indicators follows for your reference in preparing your comments.

ENVIRONMENTAL PROTECTION INDICATORS FOR CALIFORNIA
INITIAL SET OF ENVIRONMENTAL INDICATORS

Environmental indicators present scientifically-based information on the status of, and trends in, environmental conditions over time. The issues represented by the indicators are shown as italicized text. Each indicator is classified based on the availability of data, as follows:
***Type I**: adequate data are available for presenting a status or trend.*
***Type II**: further data collection/analysis/management is needed before a status or trend can be presented.*
***Type III**: conceptual indicators for which systematic data collection is not in place.*

AIR QUALITY

(Air quality-related indicators also appear in the following sections: Land, Waste and Materials Management; Pesticides; Transboundary issues; and Ecosystem health)

Criteria air pollutants

Ozone

- Days with unhealthy levels of ozone pollution (Type I)
- Peak 1-hour ozone concentration (Type I)
- Exposure to unhealthy ozone levels in the South Coast air basin (Type I)
- Emissions of ozone precursors: Volatile organic compounds + Oxides of nitrogen (Type I)

Particulate matter (PM10)

- Days with unhealthy levels of inhalable PM10 (Type I)
- Peak 24-hour PM10 concentration (Type I)
- Annual PM10 concentration (Type I)
- Total primary and precursor PM10 emissions (Type II)

Carbon monoxide

- Days with unhealthy levels of carbon monoxide (Type I)
- Peak 8-hour carbon monoxide concentration (Type I)
- Carbon monoxide emissions (Type I)

Toxic air contaminants (TACs)

- Total emissions of TACs (Type II)
- Community-based cancer risk from exposure to TACs (Type II)
- Cumulative exposure to TACs that may pose chronic or acute health risks (Type II)

Visibility

- Visibility on an average summer and winter day and in California national parks and wilderness areas (Type II)

Indoor air quality

- Household exposure of children to environmental tobacco smoke (Type I)
- Indoor exposure to formaldehyde (Type III)

WATER

(Water-related indicators also appear in the following sections: Land, Waste and Materials Management; Pesticides; and Ecosystem health)

Water quality

Multiple beneficial uses

- Aquatic life and swimming uses assessed in 2000 (Type I)

- Spill/Release episodes- Waters (Type I)
- Leaking underground fuel tank (LUFT) sites (Type I)
- Groundwater contaminant plumes - Extent (Type II)
- Contaminant release sites (Type II)

Drinking water
- Drinking water supplies exceeding maximum contaminant levels (MCLs) (Index)

Recreation
- Coastal beach availability – Extent of coastal beaches posted or closed (Type I)

Fish and shellfish
- Bacterial concentrations in commercial shellfish growing waters (Type I)
- Fish consumption advisories - Coastal waters (Type I)
- Fish consumption advisories - Inland waters (Type III)

Water supply and use
- Statewide water use and per capita consumption (Type I)
- Water use efficiency – Recycling municipal wastewater (Type I)
- Groundwater supply reliability (Type III)

LAND, WASTE AND MATERIALS MANAGEMENT

Waste generation

Waste generation, in general
- Statewide solid waste generation, disposal and diversion, per capita (Type l)
- Number of tires diverted from landfills (Type I)
- Hazardous waste shipments (Type I)
- Federal and California-only hazardous waste generation (Type II)

Accidents/disasters/spills/releases
- Hazardous material incidents (Type I)

Waste importation/exportation
- Hazardous waste imported/exported (Type II)

Disposal to land
- Statewide solid waste disposal per capita (Type I)
- Hazardous waste disposal (Type I)

Site contamination
- Cleanup of illegal solid waste disposal sites (Type II)
- Tire cleanup (Type II)
- Soil cleanup (Type I)
- Contaminated sites (Type I)

Cross-media contamination
- Number of environmental releases from active landfills (Type III)
- Groundwater contaminant plumes - Extent (see Water section)
- Contaminant release sites (see Water section)

PESTICIDES

Air
- Number of detections of pesticides identified as toxic air contaminants and the percent that exceeds numerical health standards each year (Type III)

Water

- Area with pesticides detected in well water (Type I)
- Simazine and breakdown products in a monitoring network of 70 wells in Fresno and Tulare Counties (Type I)
- Pesticide detections in surface water and the percent that exceeds water quality standards (Type III)

Pesticides in food

- Percent of produce with illegal pesticide residues (Type I)

Pesticide use

- Pesticide use volumes and acres treated, by toxicological and environmental impact categories (Type II)

Integrated pest management

- Number of growers adopting reduced-risk pest management systems and the percent reduction in use of high risk-pesticides (based on Alliance grant targets) (Type II)

Human health

- Number of reported occupational illnesses and injuries associated with pesticide exposure (Type I)

Ecological health

- Number of reported fish and bird kills due to pesticide exposure each year (Type II)

TRANSBOUNDARY ISSUES

Global pollution

Climate change

- Carbon dioxide emissions (Type I)
- Air temperature (Type l)
- Annual Sierra Nevada snowmelt runoff (Type I)
- Sea level rise in California (Type I)

Stratospheric ozone

- Stratospheric ozone depletion (Type I)

Trans-border pollution

California-Baja California, Mexico border issues

- Air pollutants at the California/Baja California, Mexico border (Type I)

Domestic border issues

- Amount of hazardous waste imported/exported (See Land, Waste and Materials Management Section) (Type II)

International border issues

- Ballast water program (Type III)

ENVIRONMENTAL EXPOSURE IMPACTS UPON HUMAN HEALTH

Human body concentrations of toxic chemicals

Surveillance of persistent organic pollutants in body tissues and fluids

- Concentrations of persistent organic pollutants in human milk (Type III)

Lead in children and adults

- Elevated blood lead levels in children (Type II)

Mercury in children and adults

- Mercury levels in blood and other tissues (Type III)

ECOSYSTEM HEALTH

Land cover and management & threatened and endangered species

Land cover

- Land cover of major terrestrial ecosystems in California (Type I)

Land management

- Land management in California (Type I)

Threatened and endangered species

- California threatened and endangered species (Type I)

Health of aquatic and coastal ecosystems

Aquatic life protection and biodiversity

- Status of Central Valley Chinook salmon populations (Type I)
- California least tern populations (Type I)
- Persistent organic pollutants in harbor seals (Type III)

Habitat and water quality protection

- Clarity of Lake Tahoe (Type I)
- Stream bioassessment - invertebrate populations (Type II)
- Endocrine-disrupting chemicals in aquatic ecosystems (Type III)

Desert ecosystem health

Alteration in biological communities

- Status of the desert tortoise population (Type I)

Habitat degradation

- Impacts of off-highway vehicles on the desert (Type III)
- Distribution of exotic plants (Type III)

Health of forests, shrub land, and grassland (terrestrial) ecosystems

Habitat quality and quantity

- Change in habitat quantity in rangelands and forests (Type I)
- Change in forest canopy (Type I)
- Pest and disease related mortality in forests (Type I)
- Wildfires in forests and grasslands (Type I)
- Sustainability of California's forests (Type I)

Loss of biodiversity

- Status of northern spotted owl (Type II)
- Status of amphibian populations (Type III)
- Ozone injury to pine needles (Type III)

Agroecosystem health

Availability of natural resources

- Conversion of farmland into urban and other uses (Type I)
- Soil salinity (Type II)

Positive and negative environmental impacts

Urban ecosystems

- Urban tree canopy (Type III)

BACKGROUND INDICATORS

(Note: Background indicators do not represent particular environmental issues in themselves, but provide information with which to interpret the meaning of various environmental indicators presented in this document)

Population Demographics

- Total California population
- Annual population growth

Economy

- Gross State Product (GSP)

Energy Consumption

- Total energy consumption vs. GSP
- Energy consumption in California by sector (transportation, industrial, residential, and commercial)
- Residential energy consumption per household

Transportation

- Motor gasoline consumption, vehicle miles traveled, and efficiency

Human Health

- Life expectancy at birth for the United States and California; including a status of leading causes of death in California
- Infant death rate
- Self-reported asthma prevalence among adults in California and U.S.
- Estimated U.S. annual average rate of self-reported asthma

Water supply

- California's water supplies with existing facilities and programs

Land use

- Progression of development of California's land